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REDISCOVERY OF *DROSERAZONARIA* PLANCH.

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Drosera zonaria is a Western Australian sundew described by Planchon from two barren rosettes collected by James Drummond and now held in the herbarium of the Royal Botanic Gardens, Kew.

Bentham (1864) bestowed against *D. zonaria* a large question mark and suggested that it was "possibly a barren state of *D. rosulata*," thus creating a doubt which was to be intensified by the subsequent lack of further specimens, more particularly of flowering material needed to establish the status of the plant. It has been ascertained that the type specimen was eventually preserved at Kew under *D. erythrorrhiza*, probably for the same cogent reasons that led Gardner (1931) to omit the name. Diels (1936), in a comprehensive summary of the genus, also omitted this species.

In August, 1952, I found near Guildford a small community of sundews, all barren forms, having the appearance illustrated in the accompanying figure. It was not until May, 1954, that any flowering forms were seen and, because these flowered before leaf development occurred, they ran down in Blackall's (1954) key to *D. squamosa*. Despite this, however, the leaves when fully grown answered in detail to the following description of *D. zonaria* in Bentham (*loc. cit.*): "Leaves of a light green colour, broadly orbicular or almost reniform or fan-shaped, above $\frac{1}{2}$ in. broad, shortly euneate at the base, on a petiole usually longer than the lamina, the margin elegantly fringed by the glandular cilia of the genus, the veins scarcely conspicuous."

In the absence of reference specimens of *D. squamosa* or *D. zonaria* a mount showing various phases of growth of the plant from Guildford was forwarded to Kew for determination, and the Director, Royal Botanic Gardens, replied, ". . . the specimen [has been] compared with the type specimen of *D. zonaria* Planch. for which it is a good match. It differs in a number of points from *D. squamosa* Benth. and also from *D. erythrorrhiza* Lindl."

A complete description of the plant is to be drawn up at Kew, embodying for the first time details of the flower and the form of inflorescence, and for that reason those features are not discussed here.

I understand from Dr. G. Taylor, Director, Royal Botanic Gardens, that the type specimen of *D. zonaria* is undated and that no indication of the type locality accompanies it. Furthermore, no mention of the plant has yet been found in the Drummond-Hooker correspondence preserved at Kew. It may therefore be of interest to record that the present known locality in which these plants grow is only a short distance from the boundary of old Helena Location 17 which was granted to Drummond on his application dated February 14, 1839, the year in which the first fruits of his collecting were sent overseas.



Drosera zonaria, natural size.

The complete lack of specimens of this sundew in numerous collections made in Western Australia over more than a century may be held as sufficient evidence that it has for long been very limited in distribution. The present community is, therefore, quite likely to be the remnants of what may have been a somewhat larger but still isolated and rare community discovered by Drummond.

An elegant symmetry of leaf arrangement which I have attempted to portray in the figure is characteristic of plants seen in the field but is lost to some extent in pressed specimens owing to a tendency for the leaves to recurve strongly after the plant has been lifted from the soil. The force with which this occurs is sometimes quite remarkable and has a bearing on several aspects of the natural history of the plant which it is hoped to communicate later. For our present purpose it explains a typically flat to convex form of the rosette which is not brought out in the illustration. It should be explained also that heavy stippling in the figure is intended to portray a fairly constant red colouring on the extremity of each blade.

I am indebted to Dr. G. Taylor for comparison with the type specimen and for helpful information. A plan showing Drummond's grant was sighted by courtesy of the W.A. Archives.

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COLOURING MATTERS FROM WESTERN AUSTRALIAN SUNDEWS—I. HYDROXYDROSERONE

By M. C. RUSSELL, Como.

A free red pigment occurring on the outside of the tubers of the sundew *Drosera Whittakeri*, was described by Rennie (1887) and later synthesised by Winzor (1935). Its constitution was diagnosed by Winzor and other members of a team working under Professor A. Killen Macbeth (*infra*) as 3, 5, 8-trihydroxy-2-methyl-1, 4-naphthaquinone (hydroxydroserone).

This substance, not hitherto described from any source other than *D. Whittakeri* from South Australia, occurs on the tubers of the Western Australian sundews, *D. erythrorrhiza*, *D. stolonifera*, *D. rosulata* and *D. zonaria*, and doubtless will be found to be common to all members of the section *Erythrorrhiza* to which *D. Whittakeri* belongs. It is also found in acetone, alcohol or light petroleum extracts of the dried tissues of these plants although the occurrence is erratic in leaf tissue. Somewhat unexpectedly it was found to be yielded by the tuber, stem, leaves, and particularly the flowers of *D. gigantea* which, in this respect, is unlike any other member of the section *Polypcltes* so far examined (*viz.*: *D. maerantha*, *D. Menziesii* and *D. pallida*).

Isolation of the pure substance was carried out by treatment of the tubers with cold acetone, precipitation of the pigment by addition of cold water, and subsequent recrystallisation from aqueous acetone. Several such recrystallisations were required to remove a white fatty material the occurrence of which had been noted by Rennie (1893).

The small red plates obtained in this way from the local sundews were found to be identical by melting point criterion with a sample obtained in the same way from *D. Whittakeri* (M.P. and mixed M.P. 190-191 deg.—Beek, Macbeth and Winzor (1934) reported 192 deg.).

Comparisons in the visible region between the absorption spectra in 95% alcohol of samples from *D. Whittakeri* and from local sundews were made visually by means of a comparison prism and gave evidence of identity of all samples. Only an approximate check of the actual wave-lengths of absorption maxima could be made with the equipment available but the results obtained from all samples, including that from *D. Whittakeri*, agreed within the limits of accuracy of the instrument with the data